V8 Engine

CODE →

V8.

PARSING ↓

① Lexical Analysis (Tokenization)
   ↳ Code is broken down into tokens.

② Syntax Analysis /

Tokens → AST - Abstract syntax tree.

```
Program {
  type: ---.
  body {
      Var Declar.
      ⁼
      ⁼
  }
}
AST
```

If the browser is unable to generate AST out of your syntax then its a SYNTAX ERROR.

Interpretted	Compiled
- line by line	- first compilation
	high level code → Machine code.
- Fast initial execution	- initial is heavy but executes fast
- Interpretter	- compiler.

Javascript is a combo of both, its JIT, (Just in time Compilation).

AST

INTERPRETTER

OPTIMIZATON

deoptimized

Ignition Interpretter

Interpretter sees if some code is used again & again & give it to compiler

Turbofan Compiler

BYTE CODE

HOT CODE

OPTIMISED MACHINE CODE

Execution

JUST IN TIME

Compilation.

Code

Garbage Collection
- Orinoco
- oilpan
- Scavenger
- MC

Mark & Sweep algo.

PARSING

optimised

TURBOFAN COMPILER

IGNITION INTERPRETTER

deoptimized

OPTIMISED MACHINE CODE

BYTE CODE

EXECUTION